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ABSTRACT

Analyses of the Null Subject Parameter (NSP) suggest that several factors may influence the resetting process for second language acquisition, such as specific "trigger" data, awareness of agreement as a part of awareness of agreement (INFL), and stylistic rules such as subject postposing and anaphoric reference. Four tests were administered to two groups of second language students, Spanish speakers acquiring English as a Second Language (ESL) and English speakers acquiring Spanish as a Second Language (SSL), to elicit production and receptive data in constructions involving NSP. It was hypothesized that ESL subjects would show slower resetting of the parameter than SSL subjects. Three subject types (pronouns, "there/hay", and "it/es" existentials) were used in imitation, written production, oral production, and grammaticality judgment tasks. SSL subjects did reset the parameter more quickly. On all tasks, SSL subjects omitted subjects in "hay/es" constructions and showed variable use with pronominal subjects. SSL subjects showed an awareness of discourse factors in subject usage, but little use of stylistic inversion. Findings imply that for SSL, existentials may be "trigger" constructions. ESL subjects appeared to reset the parameter for pronominals but not existentials and still showed considerable subject deletion in "there/it" constructions at the end of the study period. For neither group was agreement a factor in determining subject use. (Author/MSE)

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University Research Institute

Final Project Report

1987-88

Parameter Resetting in Second Language Acquisition

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Parameter Resetting in Second Language Acquisition
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5. Summary

Analyses of the Null Subject Parameter (NSP) have suggested that several factors may influence the resetting process for second language acquisition, such as specific "trigger" data, awareness of Agreement as a part of INFL, and stylistic rules such as subject postposing and anaphoric reference. Four tests were administered to two groups of second language students, Spanish speakers acquiring English (ESL) and English speakers acquiring Spanish (SSL), to elicit production and receptive data in constructions involving NSP. Following Rizzi (1982), it was hypothesized that the ESL subjects would show slower resetting of the parameter than the SSL subjects.

Three subject types, pronouns, there/hay, and it/es existentials were used in imitation, written production, oral production, and grammaticality judgement tasks. The results of the four tests indicated that the SSL subjects did indeed reset the parameter more quickly than the ESL subjects. On all four tasks, the SSL subjects both omitted subjects in hay/es constructions and showed variable use with pronominal subjects. They showed some awareness of discourse factors in subject usage, but showed little use of stylistic inversion. The data imply that, for SSL, the existentials may indeed be "trigger" constructions (REF). The ESL subjects, on the other hand, appeared to reset the parameter for pronominals but not for existentials, and still showed considerable subject deletion in there/it constructions at the end of the study period. For neither group was agreement a factor in determining subject use.

Parameter Resetting in Second Language Acquisition

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1. Introduction

While the marriage of language acquisition and linguistic theory seems natural, the links between theory and data have often been tenuous. The pioneering work by Bellugi (1967), Brown (1972), and others who used Chomsky's (1957) transformational grammar to describe regularities in first language acquisition was more descriptive than explanatory. Although the framework of Aspects (Chomsky, 1965) argued for a "psychologically real" grammar, it did not clearly define what psychological reality entailed, nor did it specify the makeup of the Language Acquisition Device (LAD).

The advent of the Extended Standard Theory (Chomsky, 1972), with its emphasis on constraints and semantic interpretation, led to a revival of acquisition studies based on linguistic theory, particularly by Roeper and his students (see Goodluck and Solan, 1978; Tavakolian, 1981). Such studies still relied on restricted linguistic hypotheses, and often developed explanations from the data rather than from the theory. In spite of the L1 research which supported the usefulness of generative grammar models to create hypotheses for acquisition (Flynn, 1983; Lust, 1981, 1986; Otsu, 1981; Phinney, 1981; Solan, 1978), research in second language acquisition generally did not follow suit (Flynn (1983) being a notable exception).

More recently, the Government-Binding framework (GB) (Chomsky, 1981, 1982, 1986) has provided a new direction for language acquisition research. For the first time, the linguistic model has

begun to specify the contents of the LAD, as well as what it means for a grammar to be "psychologically real." The framework is simpler in many ways than previous models; the grammar is modularized, rules are stripped down to their simplest components, and constraints are generalized. The GB framework is also the first generative model to assume that it must account for both first and second language acquisition. As a relatively recent theory, GB has just begun to influence language acquisition research. However, it has the potential to be a truly explanatory model for many aspects of language acquisition.

This study uses the GB framework to generate hypotheses about the acquisition of English and Spanish as second languages. Specifically, it examines the resetting of one parameter, often called the Null Subject Parameter (Rizzi, 1982; Jaeggli and Safir, 1989), during second language acquisition by adults. Part two of this report will review the assumptions of the parameterized model of grammar and the implications of that model for second language acquisition. Part three will describe the studies and the results. Part four will interpret these results in light of the hypotheses.

2. The Government-Binding Framework

Unlike previous transformational models, the GB framework includes both universal (Core) and particular (Periphery) grammar. Core Grammar (CG) contains several modules of basic general principles which can account for a variety of constructions. The modules include conditions on case assignment, thematic role assignment (θ-criterion), classification of NP types and conditions on their occurence, conditions on coreference (Binding) and conditions on the relationship between nodes (Government). These principles are assumed to be invariate; they are basic principles which apply in all languages, although the manner of their application may vary in pre-defined ways.

CG is the primary linguistic component of the LAD. It is assumed that all children begin with the basic CG principles, and that part of the acquisition process entails discovering how the input language handles the various aspects of each module. For example, there are three types of noun phrases: anaphors, pronouns, and referential expressions. A child must determine which lexical items in her language are anaphors (in English, reflexives and reciprocals) and which are pronouns. Once this is accomplished, the CG conditions will govern her use of these lexical items within the strucures available in the child's grammar. She must also determine how the various types of empty noun categories fit into this classification to predict how they behave.

Variations on these principles must be determined based on the available linguistic input. Such variable conditions include parameters, conditions which may allow a set of possibilities which a language may select from. These settings may be ranked according to markedness and generally affect a range of syntactic constructions which may not appear to be related on the surface. These parameters are crucial in language acquisition. At the initial stages of L1 acquisition, the parameters are assumed to be in their unmarked state. This means that the child will assume that they will operate in that way until the input data provides sufficient evidence to the contrary. It has been hypothesized (Roeper, 1982) that certain data is required to "trigger" the resetting of a parameter. These triggering constructions are frequent in the language, but may be crucial in the resetting process. One of the issues in applying the model to L2 acquisition is the nature of this resetting process when the parameter has already been set in the first language.

2.1 The Nature of Parameters: Null Subject

As defined above, parameters are aspects of CG which allow a restricted set of possibilities. For example, the X-bar theory of Phrase Structure hypothesizes that CG contains a basic PS rule (11).

1. X" -> (Spec) X'

Rule (1) means that any phrasal level category (X") can be broken down into a specifier (SPEC) and a head (X'). In the case of English noun phrases, for example, the Spec is the Determiner, while the head noun is a "small" NP (N'). In English, the Spec generally

occurs before the head; in other languages, the Spec may follow the head, or the order may be mixed, before in some phrase types and after in others. Rule (1) is a part of CG; the variations make up a parameter whose setting must be determined by the child from the available input data. Hearing a sentence like "Look at the dog" and recognizing the dog as a phrase with dog being the content part would be, in theory, sufficient to set this parameter. In practice, a minimum level of input would be necessary to prevent setting from a single erronious case.

The parameter which has been most discussed in recent research is that dealing with the occurrence of empty subjects. Originally called Pro-Drop (Perlmutter, 1971), it is now called the Null Subject Parameter. Perlmutter's basic observation can be illustrated with examples from English and Spanish. In null subject languages, subjects may be empty in several constructions (2) while the corresponding constructions in a non-null subject language are ungrammatical (3).

2. a. Missing subject pronoun

EC comen a las nueve.

they-eat at nine

'They eat at nine'

b. Free subject-verb inversion in simple sentences

i. La profesora ha llamado

the professor has called

ii. EC_i ha llamado la profesora$_i$

has called the professor

'the professor has called'

c. Apparent violation of the that-trace filter

¿Quién$_i$ creyó la policía [que [EC$_i$ usó guantes?]]

'Who did the police think wore gloves?'

d. Subject extraction from a wh-island

la mujer$_i$ que no conozco cuando EC$_i$ ha llamado

'the woman about whom I don't know when she has called'

e. Null resumptive pronoun

la profesora$_i$ que no conozco que ha dicho que EC$_i$ ha llegado

'the professor about whom I don't know who has said that she has arrived'

3. a. *(They) eat at nine.

b. *Has called the professor

'The professor has called'

c. *Who$_i$ did the police think that e$_i$ wore gloves

d. *The woman$_i$ about whom I don't know when EC$_i$ has called

e. *The professor$_i$ about whom I don't know who has said that EC$_i$ has arrived

The Null Subject parameter may be related to the Empty Category Principle (Jaeggli, 1982; Rizzi, 1982), which states that all empty categories [NP$_e$] must be properly governed. Proper government for empty categories entails government by N, V, A, or P or a bound (coindexed) antecedent. In English, sentences (3) will be ruled out because in all cases there is no proper governor for the subject position.

In Spanish, however, the equivalent sentences (2) are grammatical. It has often been observed (Perlmutter, 1971; Pesetsky, 1982; Taraldsen, 1978) that the null subject effect is correlated with "rich" verbal morphology which allows the subject to be recoverable when it is lexically empty. If we assume, following Rizzi (1982), that in languages like Spanish and Italian AGR can be a proper governor, then sentences (2) are predicted as grammatical. Whether the empty category results from movement, as in (2b-d) or is base generated as in (2a) and (2e), the subject position will be properly governed by the "rich" AGR. Thus in English, [INFL [+tns] AGR] will assign case but not properly govern an empty category. In Spanish, [INFL [+tns] AGR] will both assign case and properly govern an empty subject category.

2.2 The Acquisition of Parameters

Parameters like Null Subject, unlike the basic CG principles, allow a restricted set of possibilities. These settings can be ranked according to markedness; marked settings are assumed to be acquired later, require more input (Eckman, 1977), and possibly require specific "trigger" data. The unmarked setting of the Null Subject parameter is assumed to be that exemplified by Spanish and Italian, in which AGR may properly govern an empty subject position (Rizzi, 1982). English is assumed to be marked for this parameter.

The model assumes the child begins with CG in the unmarked state, implying that s/he expects that the verbal agreement will be rich and that subjects are not required, in short that AGR is a proper

governor. The child who is acquiring English must reset the parameter on the basis of the input data. Possible triggering data could include the use of semantically empty subjects it and there in existential constructions (Dresher and Hornstein, 1979) as well as a lack of extensive verbal morphology. The latter presents problems for acquisition; a "lack" constitutes negative evidence, which is difficult to justify for learnability (Baker, 1979). English retains some verbal agreement in the irregular verbs and the third person singular present; it is not clear if and when the child realizes that it is not sufficient.

2.2.1 Evidence from L1 Acquisition. Although L1 acquisition research based on linguistic theory is not new, research specifically designed to address the predictions of the parameter setting model of GB is very recent and not plentiful. While there is considerable research using the REST model (Otsu, 1981; Otsu et al., 1983; Phinney, 1981; Solan, 1983; Tavakolian, 1981), only one major study has appeared treating first language acquisition within a parameterized model (Hyams, 1986), although others have recently been published (see the papers in Roeper and Williams, 1987). Hyams' study contrasted the acquisition of Italian, a null subject language, with published data in English, a non-null subject language.

Following the logic outlined above, she notes that data from early child language shows that subjects appear to be optional in many languages, including non-null subject languages like English and German. In other words, children seem to initially assume that AGR is a proper governor for base-generated empty categories in the subject

position. Hyams further suggests that at this stage, the child grammar "filters out" input data which does not fit the grammar. If the model is correct, use of empty subjects should decrease around the time that the verbal system is settled; in English, at the time auxiliaries appear. Data from Menyuk (1969) and Bellugi (1967) are cited which indicate that this is the case.

Verbal morphology in English is notoriously late in acquisition; the third person singular -s, the only remaining reflex of verbal agreement, is one of the last morphemes to be acquired (Brown, 1972) and the modals come in relatively late compared to the acquisition of modals in other languages with a "rich" verbal morphology. Hyams notes that the Italian children she studied acquired verbal morphology earlier than English children, making MLU comparisons impossible, and suggests that the "late" acquisition of English modals is due to the resetting of the parameter.

A second prediction from the model concerns the triggering data required to set the parameter. To switch from the unmarked (null subject) to the marked (non-null) subject may require specific data, possibly the semantically empty existentials it and there. Hyams argues that there is a strong correspondence between the disappearance of empty subjects in English acquisition and the appearance of it and there, further supporting the connection between these data and the parameter. It is impossible, however, to make any claims about the structure of the input required or the number of tokens necessary, since the input data from the study (Bloom, 1969) are not available. However, it has been suggested that for children, developmental

factors interact with the linguistic factors, and that children will not attend to the data until they are cognitively as well as linguistically ready to do so (Roeper, 1982).

The model thus suggests connections between previously unrelated facts which are born out by the data. It also provides a principled means for cross-linguistic acquisition studies. The parameter setting model thus provides new explanatory power for first language acquisition research.

2.2.2 Evidence from Second Language Acquisition. Considerable research has recently been published concerning the relevance of the model for second language acquisition, which was not directly addressed by the original framework (see Bardovi-Harlig, 1987; Flynn, 1987; Liceras, 1986; Mazurkewich, 1984; Phinney, 1987, 1988; White, 1985). The markedness-parameter framework, while directly relevant to L1 acquisition, must be altered somewhat to account for second language acquisition by adults.

First, it is generally assumed that the LAD does not function identically in adults and children. The critical period hypothesis, untenable in the strong version, nevertheless is generally assumed to hold at a weaker level, inhibiting rather than restricting second language acquisition in adulthood. In terms of the GB framework, the LAD is no longer in its unmarked CG state in adults since parameters have already been set for the first language. If the second language requires different settings for particular parameters, then they must be reset as part of the L2 acquisition process. Logically, one possibility would be to begin at the unmarked CG state; this would

lead to the hypothesis that L2 acquisition should be very similar to L1 acquisition. However, the extensive literature on L1 interference would seem to indicate that a "tabula rasa" approach is not reasonable. More likely, resetting from the L1 state must occur, although there is probably some interaction with the CG markedness values.

Several proposals have been made about this interaction; generally, the argument hinges crucially on the assumptions made about the markedness values of the settings. The predictions also depend on the interpretation given to markedness. In L1 acquisition, it appears that a marked setting must be instantiated and triggered, that considerable input is required, and that acquisition will be "later" than with the unmarked setting. In adult L2 acquisition, other considerations intervene, including the cognitive abilities and styles of the learner, metalinguistic abilities, and the amount and kind of input.

White (1982, 1985), in comparing the second language acquisition of English and French, both non-null subject languages, argued that English was the unmarked case. She takes a data-driven view of markedness based on learnability arguments. On this basis, English is unmarked because null subject language learners hear input with empty subjects (especially existentials), which is sufficient evidence that subjects may be dropped. Non-null subject language learners, if they begin by assuming subjects may be dropped, will only hear a high percentage of sentences with subjects and never be able to decide

whether subjects may be dropped in some cases. Therefore, she assumes the unmarked case is to require subjects.

Other research (Phinney, 1987, 1988) assumes Rizzi's (1982) analysis, and contrasts the L2 acquisition of English and Spanish on that basis. The results indicate that Spanish students acquiring English seem to reset the null subject parameter more slowly than do English students acquiring Spanish. Spanish students typically make errors like those in (4), even at higher proficiency levels (data from writing samples).

4. a. I like to visit this place because ____ is very comfort.

   b. But ____ can be dangerous because the sea is trecherous in ocation.

   c. ____ Exist one touch of proporcinality of colors that is very interesting and beautiful.

   d. I recommend that ____ go to this place [Punta Salinas].

The sentences in (4a-c) indicate missing existential subjects; (4d) indicates a missing referential subject (you). The first type of error seems to persist longer; this may be due to the lack of semantic content in it and there as well as the fact that the empty category in the parallel constructions in Spanish may have special status (Suñer, 1982).

In contrast, English speakers acquiring Spanish show different error patterns. Often they overuse subjects (5a) or make an error in verbal agreement (5b). However, they do not insert pronominal

subjects in existentials, even when they make an error in the verb (5c).

5. a. Yo llamo mi padre.
'I call my father'

b. Me acostarse á nueve.
refl get up-inf at nine
'I get up at nine'

c. Me gusta la playa mucho y están buenas playas en Cape Cod.
'I like the beach a lot and there are good beaches on Cape Cod'

(5a) occurred in a composition which was entirely in the first person. Therefore, the pronoun was not required by context or by the grammar. In (5b), the student used the infinitive form instead of the correct verb form me acuesta. In (5c), the student erred in using están 'they are' rather than hay, 'there is/are', but did not use a subject. In fact, the hay/es constructions seem to be particularly easy to acquire for English speakers. According to the logic above, this would seem to indicate an early, if partial, resetting of the parameter.

This brings up another issue, that of the resetting process itself. Although Emberson (1986) argues that resetting should be an all or nothing process, contrary to the data discussed above, the five empty subjects in (2) do not come from the same source. Empty subjects in (2a) and (2e), as well as the empty subjects in hay/es constructions, are base generated empty categories. The others may

result from movement rules. (2b) may be derived via a subject postposing rule (Torrego, 1984) which is predictable for null subject languages but which does not occur in non-null subject languages. (2c) and (2d) derive via WH Movement, which is a universal rule subject to Subjacency. In (2c) there is no apparent violation of Subjacency; there is in (2d). The data in the cases of the base generated empty subjects in (2a) and (2e) are compounded by the interaction of stylistic rules which make lexical subjects possible and even highly likely in certain contexts. Thus simply resetting the parameter may not be sufficient; at the least, the postposing rule must be acquired along with the stylistic conditions for inversion and use of lexical subjects. Subjacency is also a strong universal constraint; at this time there is no evidence from L2 learners about the acquisition of sentences like (2d).

Again, the GB framework does allow us to account for certain facts. It provides a principled explanation for some types of interference and transfer, as well as predictions about directional differences in L2 acquisition. In this sense, the model does begin to approach psychological reality, at least for acquisition.

3. The Study

The tests reported here were designed to collect data on the second language acquisition of constructions involving the Null Subject parameter (NSP) in several modalities, tapping both passive competence and active production. All subjects were adults acquiring either English or Spanish as a second language. The subjects were exposed to a second language environment in El Paso, which has a bilingual Spanish-English population and borders Ciudad Juarez in Mexico.

The tests were designed to evaluate the subjects' resetting of the parameter and the role of factors which have been suggested: awareness of agreement (INFL), use of trigger constructions (existentials), and awareness of stylistic rules which favor inversion in Spanish. Following Rizzi (1982), it was assumed that Spanish is the unmarked language with respect to the NSP and that English is marked. Therefore, it was hypothesized that English speakers acquiring Spanish would reset the parameter earlier than Spanish speakers acquiring English.

3.1 Subjects

Two groups of subjects were selected for these studies. Both groups consisted of students enrolled in intensive beginning level language classes at the University. One group, native speakers of Spanish, had recently arrived from Honduras on a federally sponsored

project (CAMPUS II) and were enrolled in an intensive ESOL course which met 8 hours per week. The other group, native speakers of English, were enrolled in an experimental accelerated Spanish class at UTEP which met 6 hours per week. All the students had taken one semester of college Spanish (Spanish 4101) and earned grades of 'A' or 'B'. The students in the latter group had thus had approximately forty-five hours of exposure to their second language; the Honduran students had had somewhat less prior exposure to English judging from their background information and pre-TOEFL scores. Nevertheless, I felt that the two groups were roughly comparable in initial L2 proficiency, amount of exposure to the second language during the period of the study, and motivation.

3.2 Procedures

The students were given an abbreviated version of the Language Assessment Scales (LAS) at the beginning of the semester to compare the L2 proficiency in the two groups. This test indicated that the English-speaking students did indeed appear to be slightly more proficient in Spanish than the Honduran students were in English ($t = 3.31$, $p < .01$, $df = 20$).

During the semester, all students participated in four tests. The first, an imitation task, was given to each student individually approximately three weeks into the semester. The second was a written picture description task, and was administered in class. The third was an oral picture description task, and was administered

individually. The fourth test was a judgement task using the test sentences from test one and was administered in class.

3.3 Test 1: Imitation

In the first test, subjects were asked to repeat two-clause test sentences in which the second (embedded) clause was controlled for subject type (referential pronoun, there, or it in English, pronoun, hay or es in Spanish) and for the presence (6-8) or absence (9-11) of a lexical item in the subject position. Control sentences used full noun phrase subjects in embedded clauses. There were thirty-six sentences in all.

6. a. We thought that you had an appointment later.
   b. Nosotros creímos que usted tuvo una cita después.
7. a. The manager thought that there was more work to do.
   b. *El gerente annunció que allá están cinco minutos antes de la reunión.
8. a. The children knew that it was raining this morning.
   b. *Mis amigos me dijeron que él estaba neviando en Nuevo York ayer.
9. a. *The boys remembered that ____ found the cats in a box.
   b. Los niños recuerdan que ____ encontraron los gatos en una caja.
10. a. *The cook thinks that ____ are two chickens left in the oven.
    b. El gerente creyó que ____ había más trabajo que hacer.

11. a. *My friends told me that ____ was snowing in New York.

b. Los niños saben que ____ estaba lloviendo esta mañana.

As indicated in (6-8), existentials with lexical subjects are acceptable in English but unacceptable in Spanish. Sentences (9-11a) show that tensed verbs without lexical subjects are uniformly unacceptable in English, but are acceptable in Spanish (9-11b).

Imitation has long been accepted as a tool for evaluation linguistic competence in both first and second language acquisition (Hakuta and Cancino, 1977). Subjects appear to filter the test sentences through their own grammar; when the sentence is repeated, it may reflect the subject's own competence, especially when the sentence is long enough to tax short-term memory. An imitation task is particularly valuable when dealing with a parameter like the NSP which affects empty categories. If subjects delete material which is present in the test sentence or insert material which is not present, it may indicate that the subjects' grammar does not allow or requires that material respectively. However, imitation task should be used with caution and in conjunction with other task types, especially in the early stages of acquisition. Children often will reduce sentences to fit their grammar and omit the structure under observation; adults seem to have a lower tolerance threshhold and will sometimes simply refuse to say a sentence which is too complex.

With these sentences, the parameter-setting model implies the following. Subjects who are going from a language which is marked with respect to the NSP (English) to an unmarked language (Spanish) would be expected to delete even lexical subjects to the limits of

recoverability (Chomsky and Lasnik, 1977). The trigger constructions hay and es should lead to greater deletions since these constructions are ungrammatical with lexical subjects (7-8b). On the other hand, if subjects are using their L1 grammar in Spanish, we would expect insertion of pronouns when they are not used in the stimuli as well as some insertions or misuse in the existential constructions.

Subjects whose L1 is unmarked with respect to the NSP (Spanish) and who are acquiring a marked language (English) should, under the parameterized model, take longer to reset the parameter. Assuming that the existentials it and there are trigger constructions, resetting of the parameter for those constructions, indicated by use and insertion of subjects, should lead to resetting in other constructions. Until the parameter is reset, however, we would expect high percentages of deletion in all constructions to the limits of recoverability.

Stylistic factors, however, also play a role. In Spanish, use of referential pronouns carries stylistic force, generally focus or to distinugish ambiguous referents. Since the person of the subject is usually indicated by the verb phrase, pronouns are not necessary in most contexts. Since the test sentences are isolated sentences, acceptable pronoun usage may be higher than in a discourse.

3.3.1 Method. The subjects were asked to repeat each sentence as accurately as they could. The order of sentence presentation was randomized. If the subject could not recall the sentence, it was repeated once, then the subject was asked to repeat as much of it as

s/he could remember. The subjects' responses were recorded and coded as fitting one of six categories:

SS: Subject repeated a single clause in a simple sentence

SV: Subject used both lexical subject and verb

EV: Subject used verb only with empty subject

SO: Subject used lexical subject and omitted verb

EO: Subject used empty subject and omitted verb

NR: Subject did not respond or gave incomplete response

3.3.2 Results. The coded results were first entered in a cross-tabulation table by language. One indication of the lower proficiency level of the ESL students was the high percentage of SS responses, much higher than in the SSL students. Table 1 shows the responses of the ESL students; the SSL student responses are shown in Table 2.

	Lexical Subject				Empty Subject		
Type:	NP	Pron	There	It	Pron	There	It
Response							
SS	10	24	25	29	20	28	24
SV	19	23	14	8	15	7	5
EV	7	4	9	15	20	14	21
SO	17	2	2	0	1	5	4
EO	0	0	0	2	0	0	1
NR	3	3	8	2	0	2	0

Table 1.

Responses to Imitation Task - ESL

It is clear from Table 1 that, if their responses are indicative of some aspect of the parameter resetting process, resetting for ESL students does not take place across the board but is conditioned by the type of subject involved. When the subject has lexical content and is a full noun phrase (NP), the subject is treated as paramount and is seldom omitted. There appears to be a hierarchy among the different pronoun types, with it existentials triggering more omission than there sentences. The pattern with referential pronouns seems to reflect the pattern of usage in Spanish, being retained when present in the stimulus and omitted about half the time when absent in the stimulus.

	Lexical Subject				Empty Subject		
Type:	NP	Pron	There	It	Pron	There	It
Response							
SS	2	5	7	5	5	6	6
SV	28	25	7	7	1	3	0
EV	3	5	20	25	31	28	30
SO	6	1	1	1	0	0	1
EO	0	2	2	1	3	2	2
NR	1	2	3	1	0	1	1

Table 2.

Responses to Imitation Task - SSL

The SSL students, as seen in Table 2, show a neater pattern. This may be due to the fact that as a group they are slightly more proficient, or it may be due to an earlier resetting of the parameter. Here there is a clear dichotomy between subjects with content (NP and Pronoun) and subjects without content (hay and es). The lexical subjects are retained when present and omitted with absent. Little insertion is evident, which suggests that the SSL students have acquired the sense that Spanish does not require lexical subjects. More significantly, almost all the existentials are corrected to omit subjects. Again, sentences with it/es seem to trigger more omission of subjects.

If we consider only SV and EV responses to pronoun, there and it sentences, the results are significant for each group (ESL, X^2 = 79.48, df=5; SSL, X^2 = 28.85, df=5) and for both groups together (X^2 = 108.67, df=15). The responses to the Filled subjects are graphed in Figure 1; the responses to the empty subjects are graphed in Figure 2.

3.3.3 Discussion. Given the difficulties the ESL subjects had with the task itself, any conclusions drawn from this test must be considered as suggestive only. It does appear that the ESL subjects find resetting the NSP more difficult and show more variation in resetting the parameter. However, some seem to be aware that subjects are desirable (if not yet necessary) in English and so insert pronoun subjects even when they are omitted in the stimulus. For both groups existential sentences with it/es seem to hinder subject usage than do there sentences, although the difference is more pronounced among the ESL subjects.

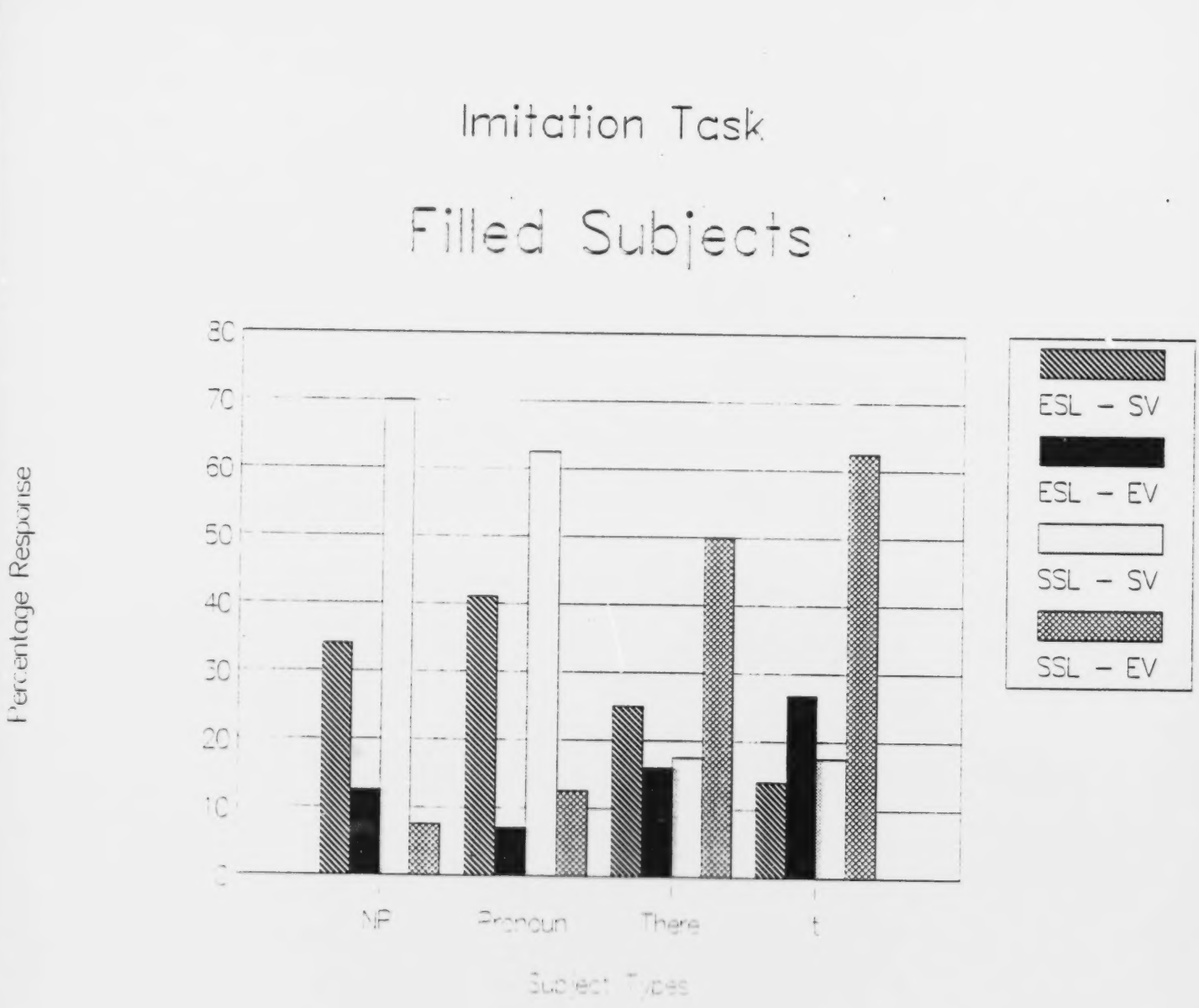
Imitation Task
Filled Subjects
Percentage Response
80
70
60
50
40
30
20
10
0
NP
Pronoun
There
t
Subject Types
ESL - SV
ESL - EV
SSL - SV
SSL - EV

Figure 1

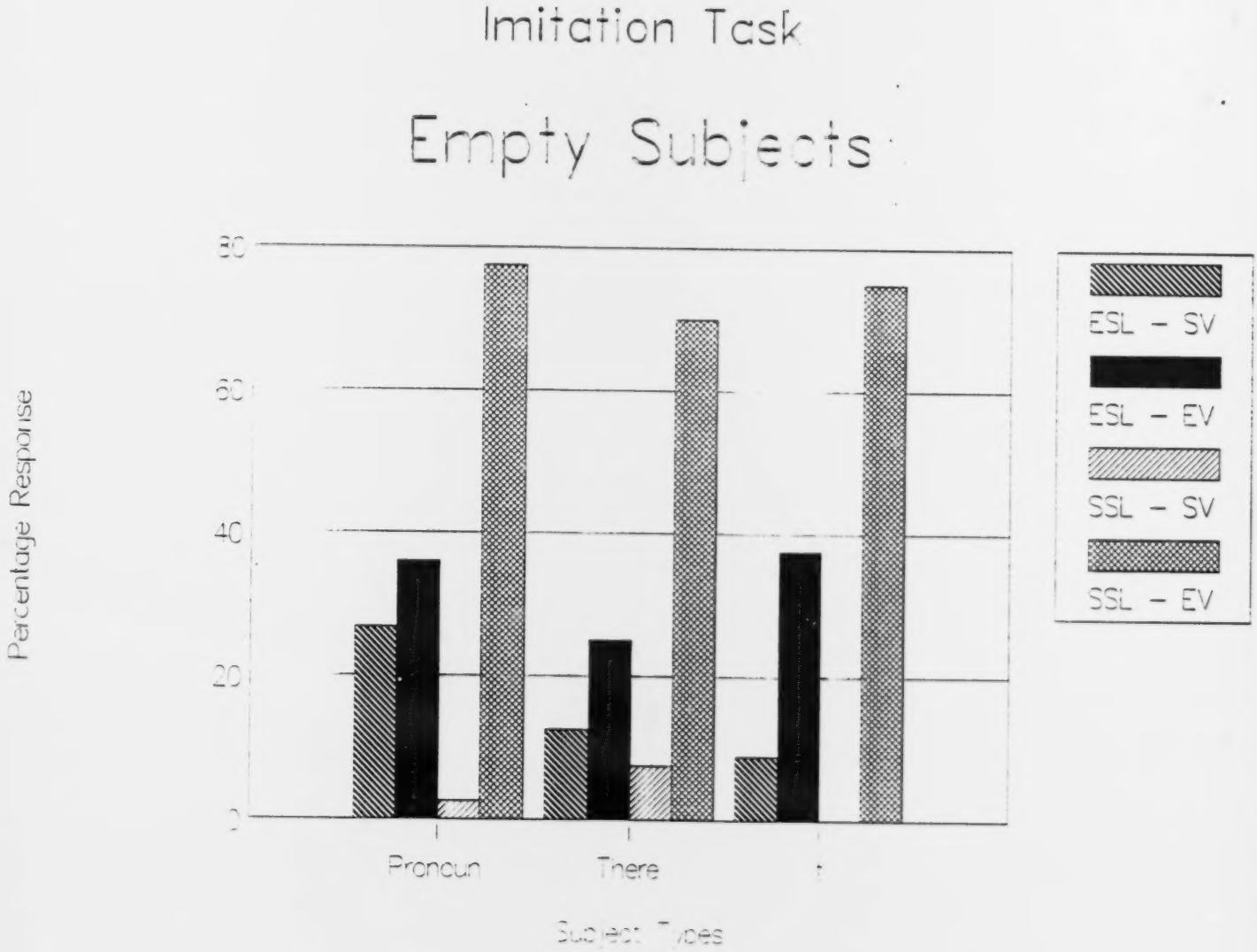
Imitation Task
Empty Subjects
Percentage Response
80
60
40
20
0
Pronoun
There
Subject Types
ESL - SV
ESL - EV
SSL - SV
SSL - EV

Figure 2

3.4 Task 2: Picture Description: Writing

The second task involved describing a picture series about a car accident (see appendix). Both groups were asked to write a description of the event sequence in their respective second language. This procedure allowed for free production within a controlled semantic domain.

3.4.1 Method. The task was given in groups during class time. Students were not allowed to use dictionaries or grammars. The task took from ten to fifteen minutes to complete.

The written descriptions were scored by finite verb phrase. Each verb phrase was scored for presence or absence of a lexical subject, the tense of the verb, the presence of an auxiliary, the person and number of the subject (lexical or implied), the type of subject (pronoun, noun, name, there/hay, it/es, or null-relative clause or conjunction), whether the verb agreement was correct, the type of clause, and whether the subject was anaphoric. Using presence/absence of subject as the dependent variable and the others as independent variables, the data were analyzed with the microcomputer version of VARBRUL, a variable rule analysis program (Amastae, 1987; Fasold, 1986; Sankoff, 1988). The data were first analyzed by language used.

3.4.2 Results. In English, only two factors were significant, subject type ($p = .032$) and clause type ($p = .009$). Only noun and pronoun subjects (12) were used with any regularity (.98 and .95 of cases). Existential there (13) was used only 50% of the time, while

it (14) was never used, even when context called for it. There is thus a clear difference between subjects with semantic content (pronouns and nouns) and subjects without content.

12. a. The woman is driving.

    b. They continues driving...

13. a. There were two people...

    b. Now is a young boy...

14. Not is permitted revasar [turn around]

Subjects were used in 93% of the main clauses, while conjoined and subordinate clauses elicited about the same percentage of subjects, 80% and 81% respectively. This indicates that main clauses are more facilitating for subject use than are subordinate and conjoined clauses, although no clause type is truly inhibiting. This result was predicted, however, by equivalent discourse conditions in Spanish, which tend to reduce subject usage in subordinate clauses or when the referent has already been introduced in the discourse.

In Spanish, subject type was also a significant factor ($p = .03$). However, the pattern of usage was somewhat different. Full noun contexts (15) elicited 98% subject usage, but pronoun contexts (16) elicited only 77%. Empty subject contexts (17) elicited some overusage of subjects, 20% of the time. Both existential subject types hay and es elicited no subject usage (18). This indicates that while these non-native Spanish writers did overuse subjects to a certain extent, as might be predicted by a straight contrastive analysis, they omitted pronoun subjects occasionally and never inserted subjects in the existential constructions.

15. María y Juan están conducienco...

16. a. Entonces, un hombre viene atrás en un coche convertible.

    b. Fueron manajando [manejando] y mirando los vistas del campo.

17. a. El está muy enojada y él rebasa muy rápido.

    b. Entonces un muchacho viene ... muy rápido y quiere pasar...

18. a. Está prohibido de pasar en este calle.

    b. Estaban [hay] dos turistas que estaban manejando por el campo.

Plurality of the subject was also significant ($p = .000$). It appears that subject usage was more common in the singular than in the plural, especially with él. This may be an artifact of learning, in that example sentences in textbooks commonly use él but less commonly use ellos. It may also reflect the discourse context; there were two male characters, but only one couple. Therefore él could be used as focus for one of the male characters, but there was no need for ellos, since a plural verb could only refer to the couple.

	Noun	Pronoun	Null	There/Hay	It/Es
English	98 (53/54)	94 (77/82)	0 (0/10)	33 (1/3)	0 (0/3)
Spanish	98 (47/48)	87 (20/23)	20 (10/50)	0 (0/2)	0 (0/2)

Chi-square = 58.496, $p < .001$

Number of Tokens for each cell is in parentheses

Table 3

Percentage of Subject Usage By Subject Type

Writing Task

When both groups were analyzed together, only one factor was significant, subject type. However, a comparison between the groups yields some intriguing contrasts. As shown in Table 3, the English Ss produced many more sentences with pronoun subjects than did the Spanish Ss, while the Spanish Ss produced more null-subject sentences. This is not surprising, since the Spanish Ss produced proportionately more conjoined and subordinate clauses than did the English Ss, as shown in Table 4.

	Main Clause	Conjoined	Subordinate	Total
English	91 (72/79)	80 (39/49)	83 (20/24)	86 (131/152)
Spanish	77 (34/44)	53 (30/57)	58 (14/24)	62 (78/125)
Total	86 (106/123)	65 (69/106)	71 (34/78)	75 (209/277)

Chi-square = 8.007, $p < .01$

Tokens for each cell are in parentheses

Table 4

Percentage of Subject Usage By Clause Type

Writing Task

3.4.3 Discussion. This task begins to provide some insight on the factors which affect subject usage in second language learners. Clearly, the type of subject is a major factor, as is the level of semantic content. For both groups, nouns and pronouns are used with equal facility. While SSL Ss appear to be beginning to omit pronoun subjects, ESL subjects have also learned to use them regularly, contrary to popular wisdom. In addition, both groups consistently omit subjects in the existentials, which is grammatical in Spanish but ungrammatical in English. This supports the concept of the existentials as "trigger" constructions, at least for Spanish. However, since ESL Ss omit existential subjects but do use pronominal subjects, it is not clear what role if any the existentials play in triggering the resetting of the parameter in English.

3.5 Test 3: Picture description: Oral

The third task was similar to the second. Subjects were asked to describe a picture (see Appendix) orally. The picture for this test, unlike that for Test 2, was designed to elicit description rather than narration.

3.5.1 Method. Subjects were shown the test picture and asked to describe the place and the people who lived there. The subjects' responses were recorded and transcribed verbatim by a bilingual research assistant. The responses were coded in the same way as the responses for Test 2, and were analyzed by VARBRUL.

3.5.2 Results. In the ESL group, two factors were significant, subject type ($p < .001$) and agreement ($p < .001$). As in Test 2, the subject type was crucial in facilitating subject usage, with considerably more variability than in the written test. Both noun phrase and pronoun contexts elicited almost native-speaker level subject usage, 95% and 89% respectively (19-20). Existential there contexts also seemed to facilitate subject usage with 71% (21). It contexts inhibited subject usage, with only 27% (22), and no subjects were used in obligatory null contexts (23).

19. a. This kitchen is very dirty.
    b. Maybe live here one person...old or desordenada [disorganized]

20. a. Maybe she or he works all the time.
    b. I think [he] is lazy.

21. a. On the table there are three books.

    b. Now, in the picture have [there are] two chair, one table.

22. The kitchen is not good because [it] is not clean.

23. a. The person that lives here is a disordered person.

    b. The woman what living here is more dirty.

Agreement also was a significant factor. When the subject-verb agreement was correct, 85% of the verbs had subjects. When the subject-verb agreement was not correct, only 62% of the verbs had subjects. At first glance, this result seems to argue against the claim that null subject usage is linked to agreement (Taraldsen 1978). However, the result could be taken as an indication of level of acquisition. Since third person singular agreement in English is one of the last morphemes to be acquired consistently by second language learners, those who use it correctly may have simply acquired more English, and thus are further along in resetting the parameter than are those Ss who do not use correct agreement.

In the SSL group, subject type was eliminated from the analysis because three of the types produced "knockouts", that is, either zero or 100% responses. These results will be discussed in a comparison of both groups. The significant factors in the analysis were tense ($p < .02$), presence of auxiliary ($p < .05$), and clause type ($p < .05$). Except for the last factor, however, the results are theoretically uninteresting. Tensed verbs proved more facilitating for subject usage than non-tensed verbs (38% to 21%). This is not surprising, since in Spanish only tensed verbs can have subjects. This result

shows awareness of universal markedness conditions on tenseless verbs, but is hardly unexpected. In the case of the auxiliary, presence of an auxiliary (usually a form of estar or tener que) seems to facilitate subject usage. However, since the comparison is 6 tokens with auxiliaries to 116 without, it is difficult to draw any definite conclusions.

The third significant factor, clause type, was also significant in Test 2. Again in this test, main clause contexts (24) were more facilitating for subject usage (38%) than conjoined or subordinating clauses (29% and 18% respectively) (25), although not to the same extent as in the written task. Overall, the SSL group used considerably fewer subjects in the oral task than they did in the written task.

24. a. El cuarto en la casa es la cocina.

    b. Probablamente [él] está gordo y está cochino.

25. a. Los platos tienen que lavarlo y ___ tienen que tirar la basura.

    b. Creo que es todo.

When both groups were combined, the analysis showed four factors to be significant: tense, language, person, and subject type ($p < .001$). Correct tense appears to slightly facilitate subject usage; again, this may be an artifact of increased proficiency. Language (English or Spanish) is indicative of changing parameters; 80% of the English tokens have subjects, whereas only 36% of the Spanish tokens do. Person showed an unexpected pattern. First person (yo/I primarily) was a strong facilitator of subject usage (91%), while the

other persons (second and third) elicited only 50% and 58% respectively. Both ESL and SSL subjects used first person pronouns heavily, even when they weren't required in Spanish, a trend which has been observed in Puerto Rican Spanish (Hochberg, 1986).

Table 5 compares the two groups by subject type. Among the ESL group, there is a clear difference between content subjects (nouns and pronouns) and semantically empty subjects (_there_ and _it_). It should be noted that of the 34 tokens of _there_ subjects, 17 were produced by the same speaker who had clearly acquired _there are_ as a frame (Peters 1983) and was beginning to use _there is_ productively. The total percentage for the rest of the group was 54% (17/31), slightly less, but still considerably higher than the percentage for _it_ constructions. The SSL group has clearly perceived that subjects are not essential in Spanish in pronominal contexts and are forbidden in existentials.

	Noun	Pronoun	Null	There/Hay	It/Es	Total
English	95	89	0	71	27	80
	(55/58)	(63/71)	(0/6)	(34/48)	(3/11)	(155/194)
Spanish	100	14	10	0	0	36
	(35/35)	(7/49)	(2/20)	(0/13)	(0/5)	(44/122)
Total	97	58	8	56	19	63
	(90/93)	(70/120)	(2/26)	(34/61)	(3/16)	(199/316)

Chi-square = 24.63, $p < .001$

Number of Tokens for each cell is in parentheses

Table 5

Percentage of Subject Usage By Subject Type

Oral Picture Description

When the results are broken down by clause type, as in Table 6, it is clear that subject use in both groups is at least partially constrained by discourse conditions, as represented by the contrast between main clauses and conjoined/subordinate clauses, which usually occur second. In the ESL group, subject usage is less prevalent in conjoined/subordinate clauses than in main clauses, possibly reflecting the use of subject as focus or topic which occurs in Spanish. In the SSL group, subject usage overall is low, but still higher in main clauses than in conjoined/subordinate clauses. An additional VARBRUL analysis combining data from both Test 2 and Test 3 indicated that the discourse mode (written or oral), language, person, and subject type were all significant ($p < .001$).

	Main Clause	Conjoined	Subordinate	Total
English	84 (121/144)	67 (14/21)	65 (17/26)	80 (152/191)
Spanish	46 (33/72)	29 (5/17)	18 (6/33)	36 (44/122)
Total	72 (154/216)	50 (19/38)	39 (23/59)	63 (196/313)

Chi-square = 10.554, $p < .01$

Tokens for each cell are in parentheses

Table 6

Percentage of Subject Usage By Clause Type

Oral Picture Description

3.5.3 Discussion. As in Test 2, both subject type and clause type are important in determining the level of subject usage in both groups. While the oral mode elicited less subject usage in both groups, again the SSL group used subjects considerably less than did the ESL group. This test shows a similar hierarchy of full noun phrase, pronoun, there, and it in the ESL group. The SSL group also used no subjects in existential constructions, as they did in Test 2.

In both Test 1 and Test 2, clause type proved a significant factor. In each case, subject usage was higher in main clauses than in conjoined and subordinate clauses. This may be indicative of the influence of discourse conditions on both groups. In Spanish, pronominal subjects which have already been introduced into the discourse need not be lexically filled (D'Introno, 1982). The SSL subjects may already have acquired this discourse rule, at least partially. In English, subjects which have already been introduced may be referred to with a pronoun, which is lower on the hierarchy.

The ESL students may partly recognize that and be translating "lower on the hierarchy" to "empty" rather than "pronoun", but they may also be suffering from interference of the discourse rules in Spanish.

3.6 Test 4: Grammaticality Judgments

This test used the sentences from Test 1. However, subjects were asked to give their judgements on the grammaticality of the sentences using a 1-5 scale. Judgements have been shown to be an effective indicator of adult language competence both for first and second language acquisition (Gass, 1980; Ioup and Kruse, 1977).

3.6.1 Method. The subjects were given a questionnaire with 36 sentences in randomized order (see Appendix). They were asked to rate the sentences on a 1-5 scale based on their "grammatical intuitions" about the sentences. There were two within-subjects factors, grammaticality and subject type (pronoun, there/hay, it/es) and one between subjects factor, second language. There were four tokens of each sentence type for a total of twenty-four sentences, with twelve "filler" sentences using full noun phrases as subjects. Grammaticality was used as a factor rather than presence/absence of subject since the grammaticality judgements of some sentences, particularly the existentials, are diametrically opposed in the two languages. For convenience, sentences with pronoun subjects in Spanish were considered to be "grammatical" if the subject was empty and "ungrammatical" when the subject was filled in order to keep the data parallel with the existentials.

The questionnaire was administered during class time to the entire group. Subjects were asked to correct any sentences they judged as ungrammatical, although these corrections were analyzed separately.

The ratings for each token within each sentence type were added, resulting in six scores for each subject. Those scores were analyzed with an analysis of variance with repeated measures.

3.6.2 Results. All factors and interactions were significant, including the three-way interaction, Language x Grammaticality x Subject ($F(2,46) = 30.41$, $p < .001$). The results of the ANOVA are shown in Table 7 and the results of the three-way interaction are graphed in Figure 3. In this and the following figures, the "mean response" indicates the mean of the total of the four tokens for each type, ranging from a possible 4 to 20.

Source	SS	df	MS	F	p
Between Groups					
Language	260.2822	1	260.2822	13.382	.0016
Error	447.3574	23	19.4503		
Within Groups					
Grammaticality	262.4370	1	262.4370	71.404	.0000
Lang. x Gramm.	88.3623	1	88.3623	24.042	.0002
Error	84.5333	23	3.6754		
Subject Type	107.8242	2	53.9121	12.081	.0002
Lang. x Subj.	137.2456	2	68.6228	15.377	.0000
Error	205.2778	46	4.4626		
Gramm. x Subject	55.2524	2	27.6262	9.149	.0007
Lang. x Gramm. x Subj.	183.6431	2	91.8215	30.409	.0000
Error	138.9001	46	3.0196		

Table 7

Analysis of Variance

Judgement Task

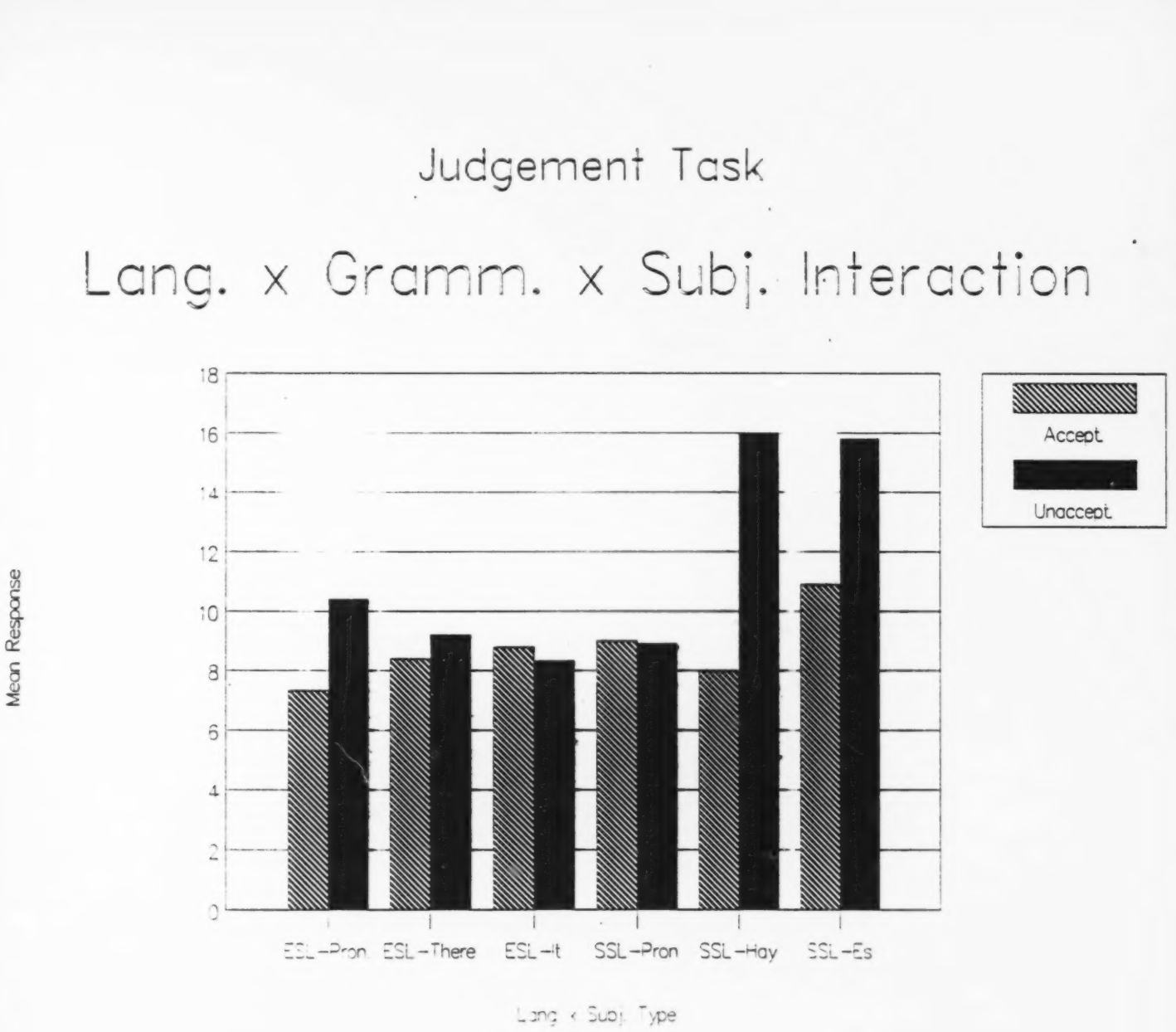
Judgement Task
Lang. x Gramm. x Subj. Interaction
Mean Response
18
16
14
12
10
8
6
4
2
0
Accept
Unaccept
ESL-Pron
ESL-There
ESL-It
SSL-Pron
SSL-Hay
SSL-Es
Lang x Subj Type

Figure 3

Tukey post-hoc tests indicated that five contrasts in the three-way interaction were significant. The ESL group clearly judged sentences with empty pronominal subjects to be significantly worse than sentences with filled pronominal subjects (crit. diff. = 2.88, $p < .01$), but made no distinction between grammatical and ungrammatical sentences with existential it and there subjects. The SSL group, on the other hand, judged sentences with filled and empty pronominal subjects as equally acceptable, but made a clear distinction between the unacceptable existentials ((7b) and (8b), repeated below as (26) and (27)) and the comparable acceptable sentences with null subjects (crit. diff = 2.88, $p < .01$).

26. *El gerente annunció que allá están cinco minutos antes de la reunion.

27. *Mis amigos me dijeron que él estaba neviando en Nuevo York ayer.

The SSL group also judged the ungrammatical existentials to be significantly worse than did their ESL counterparts (crit. diff. = 2.88, $p < .01$), while they did not judge the pronominal subjects differently than the ESL subjects.

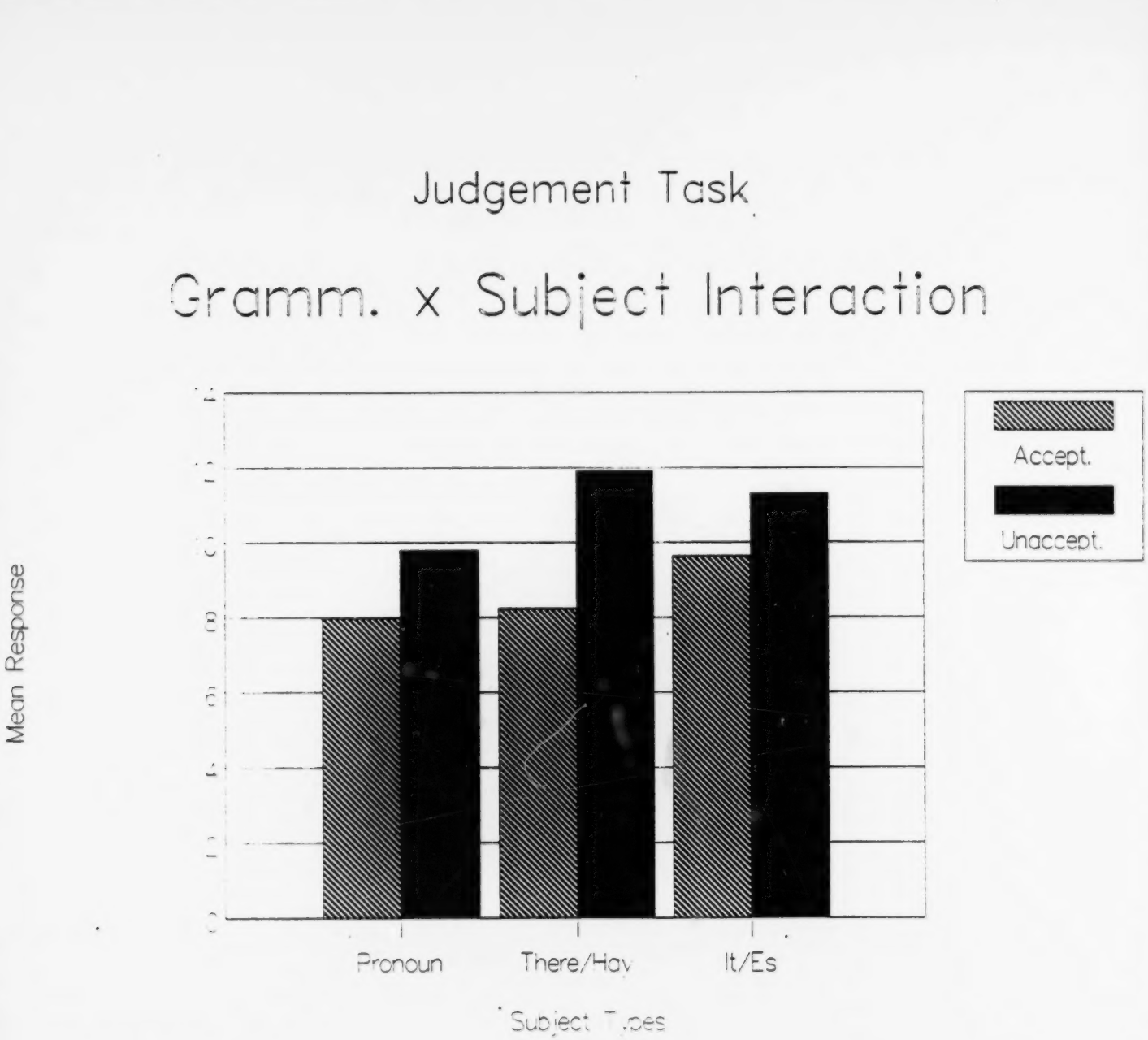
Judgement Task
Gramm. x Subject Interaction
Mean Response
Accept.
Unaccept.
Pronoun
There/Hav
It/Es
Subject Types

Figure 4

The two-way interaction of Grammaticality x Subject, graphed in Figure 4, showed that overall the subjects did make a distinction between acceptable and unacceptable sentences. Tukey post-hoc tests indicated that the contrasts between acceptable and unacceptable pronominals, acceptable and unacceptable there/hay existentials, and unacceptable pronominals and there/hay existentials were significant at the .01 level (crit. diff. = 1.7757). The contrasts between acceptable and unacceptable it existentials and acceptable pronominals and acceptable it existentials were both significant at the .05 level (crit. diff. = 1.4699).

The interaction between Language and Subject Type is shown in Figure 5. The ESL group showed no significant difference between the three subject types (Tukey crit. diff. 1.78, $p < .05$), while the SSL subjects clearly distinguished between the existentials and the pronominals (crit. diff. = 2.159, $p < .01$).

The results of the corrections made by the subjects were rather disappointing. Several subjects made no corrections and those who did varied a great deal in the type of corrections they made. However, the total number of corrections for each sentence type and the breakdown support the results of the judgement test.

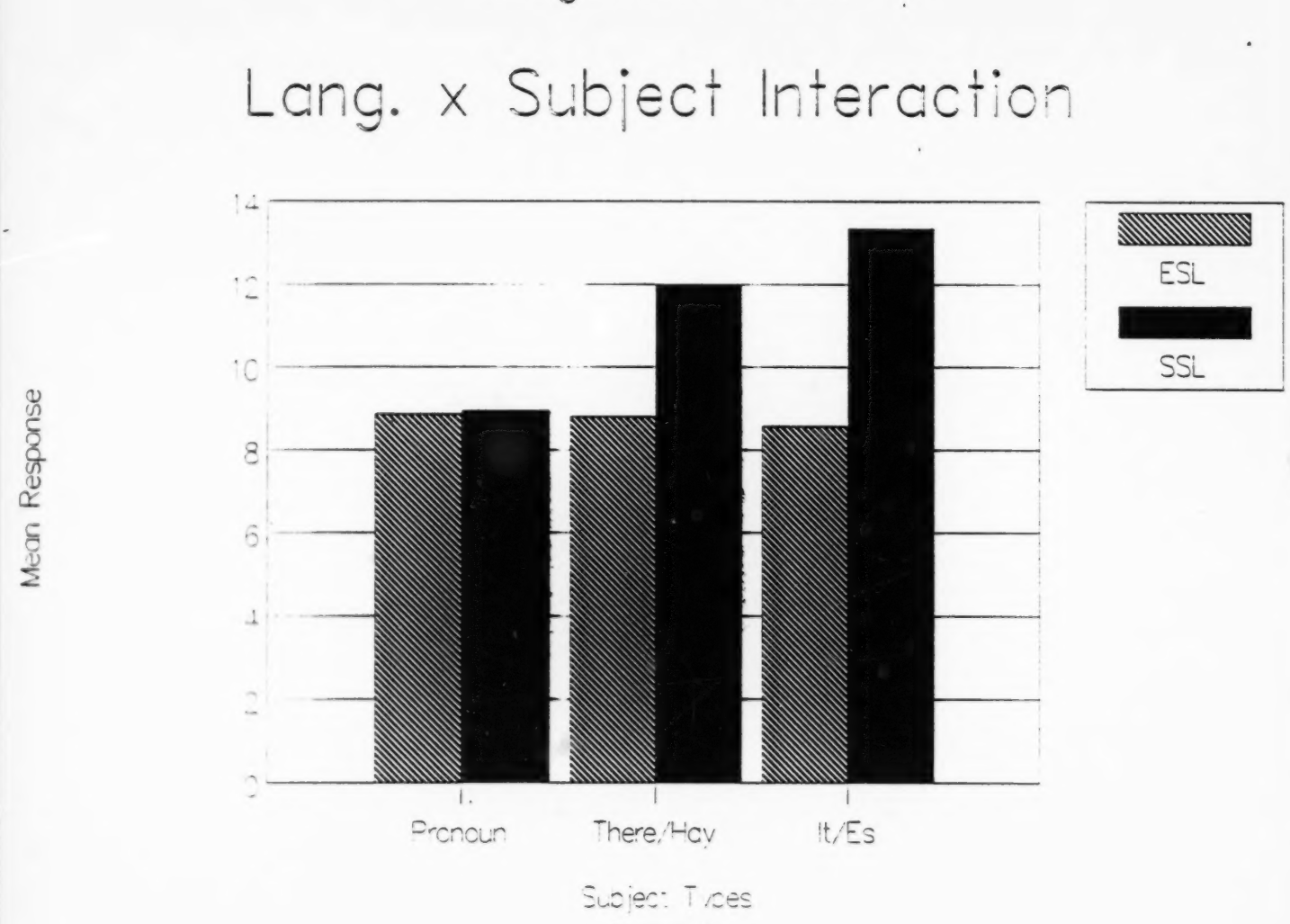
Judgement Task
Lang. x Subject Interaction
Mean Response
14
12
10
8
6
4
2
0
ESL
SSL
Pronoun
There/Hay
It/Es
Subject Types

Figure 5

As shown in Table 8, corrections varied depending on the original structure of the sentence and the subject type. Most of the corrections were tense changes (i.e. was to is) which did not affect the structure of the sentence, although they were sometimes infelicitous. Many of the tense changes came from one subject, who corrected almost nothing else. Deletions of subjects were not common, but insertions of subjects, especially pronouns and there, were frequent. However, no subject consistently inserted any subject type across all tokens. There were also a number of "word order" changes involving the subject-verb structure. For the unacceptable pronominals, these consisted solely of restructuring a that clause to a to clause to make the subjectless clause grammatical, as shown in (29).

29. a. *Her mother prefers that buy two cars for the family.

    b. Her mother prefers to buy two cars for the family.

Sentence Type	Subject Insert	Subject Delete	Tense Change	Word Order (S-V)	Change Subject	Misc.
Accept. Pronoun	0	0	5	0	0	1
Accept. There	0	2	6	1	1	2
Accept. It	0	2	5	0	0	4
Unaccept. Pronoun	6	0	2	4	0	3
Unaccept. There	5	0	3	0	1	4
Unaccept. It	1	0	8	1	0	1

Table 8

Breakdown of Corrections

ESL Subjects

The SSL group was far more consistent, both in making changes and in the types of changes they made, as shown in Table 9. There were no insertions of subjects, although they did insert other lexical material (temporal phrases, prepositions) and altered spelling and vocabulary. These changes are listed as "Miscellaneous." They did change tenses frequently, especially in pronominal sentences and es constructions. It appears that the students changed tenses with which they were unfamiliar (perfect and future) to more familiar tenses (imperfect). As shown in the judgement task, pronominal sentences were equally acceptable with or without subjects, with no subjects inserted or deleted. However, the ungrammatical trigger constructions hay/es elicited 50 - 75% deletions of the "subjects". The deletion

pattern was more consistent with the es constructions; although the hay sentences elicited almost as many corrections, almost one-third resulted in an equally ungrammatical sentence. These corrections included simply inserting hay, changing the verb están to hay, or changing allá to hay or había while leaving the verb están.

Sentence Type	Subject Delete	Tense Change	Misc.
Accept. Pronoun	0	8	0
Accept. Hay	0	0	7
Accept. Es	0	9	10
Unaccept. Pronoun	0	8	1
Unaccept. Hay	20	0	7
Unaccept. Es	29	0	0

Table 9

Breakdown of Corrections

SSL Subjects

3.6.3 Discussion. As in the other tests, the ESL subjects were both less consistent and showed less evidence of full resetting of the parameter than the SSL subjects. The ESL subjects also treated the different subject types similarly, showing some awareness that pronominal subjects were required, but making little difference between grammatical and ungrammatical there and it constructions. Although the judgement task did not indicate a difference between the

two existentials, the subjects made more corrections by inserting subjects in there sentences than in it sentences.

The SSL subjects generally indicated a solid resetting of the parameter on all subject types. Pronominals were equally acceptable whether the subject was filled or not, while the existentials were both judged unacceptable and corrected by deleting the subject when the subject was filled. They clearly had stronger intuitions about grammaticality than the ESL students.

4. Comparison of The Tests

Since the tests were given over a period of four months, the results can provide some insight into the changes in the second language grammars of the two groups over the semester. However, because of the disparate nature of the four tests, it is difficult to make comparisons of the development of individual students.

4.1 Resetting in English

Turning to the ESL subjects, it was apparent that they began with somewhat less proficiency in English than the SSL group, although the latter had had only 45 hours of instruction. The imitation task, which was the most difficult of the four tasks, taxed the ESL subjects far more than it did the SSL subjects, as shown by the high percentage of responses which reduced the stimulus to a single clause sentence. Their responses to this task indicated that they treated the three subject types differently. Pronominal subjects were seldom deleted, but inserted only slightly more frequently. There was deleted often and inserted somewhat less, while it was frequently deleted and seldom inserted.

In the writing task, one month later, they seemed to be more consistent in subject pronoun usage, although there and it were still omitted most of the time. The subjects appear to have grasped that pronoun subjects are required, at least in production, although there was some tendancy to omit them in subordinate clauses, possibly following Spanish discourse rules.

In the oral description task, two months after the imitation task, their use of pronominal subjects is still high, although less than in writing. Since the task is "on-line" and restricts monitoring (Krashen 1982), unlike the writing task, one would expect more errors and in this case, more subject omissions. Their use of there is much higher (71%), while their use of it is still very low.

Finally, the judgement task, given four months after the imitation task, still shows a hierarchy of pronoun, there and it subjects. The ESL students only made a clear judgement between filled and empty pronoun subjects, although in corrections they did tend to insert subjects in there contexts more often than in it contexts.

4.2 Resetting in Spanish

From the first test, the SSL students showed a clearer resetting of the parameter. This may be due to their slightly increased proficiency, but it is obvious that their initial responses were much more consistent than those of the ESL subjects in the final test, after 120 hours of instruction. It seems reasonable to argue, then, that they reset the parameter earlier in the acquisition process than did the ESL subjects.

The SSL subjects showed little tendancy to delete pronominal subjects when present in the stimulus and less to insert them when they were not present. They also deleted subjects in both hay and es constructions, somewhat more for the latter, and rarely inserted subjects when they were not present in the stimulus.

In the writing task, the SSL subjects did show a high percentage of pronoun subject use, perhaps higher than native speakers might produce. However, they used no subjects in existential constructions, a result which was also found by Phinney (1988). They also showed a growing awareness of discourse factors affecting subject usage, reducing their subject usage in conjoined and subordinate clauses to less than 60%.

In the oral picture description, one month later, the SSL subjects look more like native speakers. Pronominal subject usage is very low, with subjects relying on the verb agreement and on context to indicate the subject. Again, use of subjects in existential constructions is non-existent. Subject use is also reduced in conjoined and subordinate clauses.

The final judgement task at the end of the semester showed clear grammaticality intuitions on the existential constructions. Their judgements were echoed in the corrections they made, deleting ungrammatical subjects but never inserting subjects in existentials. They also accepted both filled and empty subjects in pronominal contexts. In other words, with regard to these constructions, the SSL subjects look much like native speakers.

4.3 A Comparison

One might expect a hierarchy found in one acquisition group to be reflected to some extent in the other group. However, the hierarchy of subject usage/acceptability found in the ESL group of Pronoun-There-It was not found in the SSL group. For the ESL

subjects, subject usage is strongest when the subject is a pronoun, less strong for there, and very weak for it. For the SSL subjects, hay and es seem to be similar constructions, while pronominal subject usage decreases over time and with the naturalness of the task.

Both groups appear to be considering discourse factors in their subject usage. In both groups, subject usage decreased in conjoined and subordinate clauses, although the decrease was stronger for the SSL subjects. The discourse conditions of Spanish appear to affect the subject usage in both ESL and SSL, with the SSL subjects acquiring the null-subject conditions of Spanish more rapidly than the ESL subjects acquire the opposite rules in English.

Figure 6 compares the subject usage for the first three tests. The fourth test is not included because it was a judgement task and therefore the results cannot be converted into a percentage of subject usage. It is clear that the ESL subjects began with low subject usage. In this they appear similar to children learning English as a first language, who use few overt subjects in the two-word stage, a fact which some researchers have argued implies that acquisition begins by assuming a null-subject language (Hyams 1983, 1989). Their subject usage increased over time, but the three subject types are always distinct.

The SSL subjects, on the other hand, began with relatively high subject usage for pronouns, but almost none for hay/es constructions. This pattern was maintained until Test 3, when pronominal subject usage dropped considerably. Because of the different modalities involved in Tests 2 and 3, it is impossible to determine whether the

radical drop in pronominal subject usage is due to the acquisition curve or the task itself.

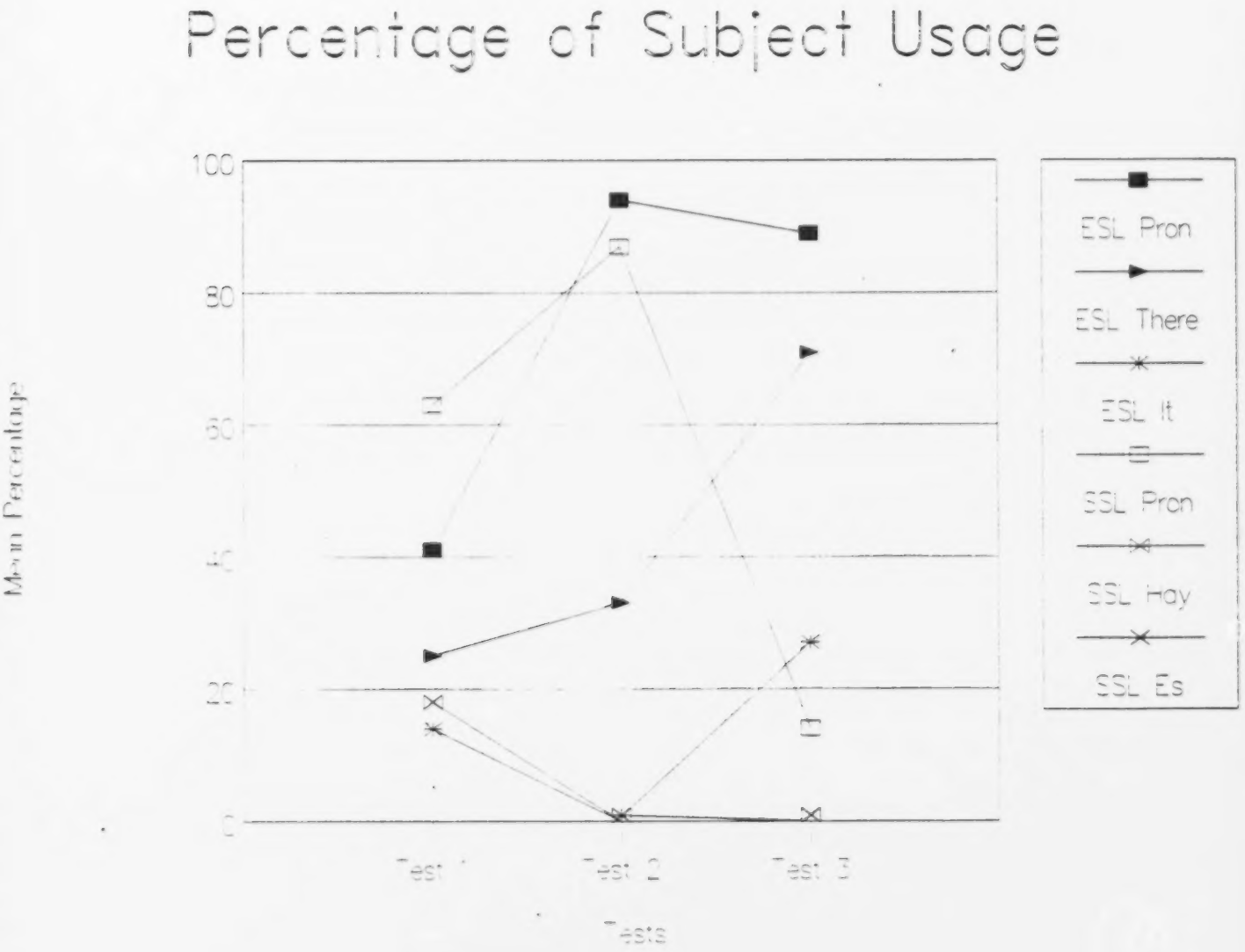
Percentage of Subject Usage
100
80
60
40
20
0
Mean Percentage
Test 1
Test 2
Test 3
Tests
ESL Pron
ESL There
ESL It
SSL Pron
SSL Hay
SSL Es

Figure 6

5. Conclusion

One of the questions which always occurs in applying linguistic theory to acquisition data is whether the data are sufficient to exclude competing hypotheses. In the case of the Null Subject Parameter, we must consider whether the data can be explained by more general acquisition processes, such as analogy of rules or overgeneralization.

If a straightforward constrastive analysis hypothesis were to be used, we might expect the ESL subjects to make a stronger distinction between pronominals and existentials at the beginning, since Spanish makes a distinction. We might also expect _there_ and _it_ to be treated similarly and omitted equally across the board, since they never occur in Spanish with lexical subjects. Conversely, we might expect the SSL subjects to try to use some type of lexical subjects with the _hay/es_ constructions, as well as show considerable pronoun insertion and usage at the beginning stages. The data do not support any of these expectations.

If we just look at the input data on the assumption that subjects are making their hypotheses based on that, we would expect the ESL subjects to show a higher percentage of subject usage than they do, especially in the existentials. The classroom input data which these subjects received was fairly structured, and the subjects did of course receive input outside the classroom. Nevertheless, we can assume that the input was mostly grammatical. When _there_ and _it_ constructions are used in the classroom, they always contain a

subject; in informal speech, they are more likely to contain a subject than sentences with pronominal subjects, which can be deleted under certain conditions like imperatives and informal ellipsis (ex. Going home now?) Thus the data do not match what we know about potential input in English.

In Spanish, classroom input also would be grammatical. In fact, from Spanish textbooks and classroom observations, it appears that pronominal subject usage would be somewhat higher than in informal conversation. If the SSL subjects are basing hypotheses on the input data, we would expect them to use existentials correctly, but we would not expect them to omit pronominal subjects to the extent shown in Test 3.

Thus, neither a model of acquisition based on contrastive analysis nor one based solely on the input data is sufficient to account for the results of this study. A parameterized grammar, however, does account for much of the data from these subjects.

I have hypothesized that second language acquisition, like first language acquisition, entails determining the appropriate setting of various parameters from the available input data from the L2. Unlike first language acquisition, however, the language acquisition device does not return to the initial state of the unmarked setting of the parameter. If that were the case, we would expect that ESL subjects would behave more like children acquiring English as a first language.

Hyams (1986, 1989) notes that children acquiring English begin with a null-subject grammar, and resetting of the parameter appears to occur just before the modals appear. This follows from a resetting of

what she calls the AG/PRO parameter to AG≠PRO. However, in this study, there was no correlation between use of modals or auxiliaries and subject usage in Tests 2 and 3. ESL subjects also seem to acquire inverted question constructions, which require lexical material in the AUX and thus require the resetting AG≠PRO, without fully acquiring the use of lexical existentials, unlike children learning English as a first language. It is therefore difficult to maintain the hypothesis that second language acquisition duplicates the parameter-setting processes of first language acquisition.

Evidence that subjects do not return to the unmarked NS setting comes from White's (1985) studies of French speakers acquiring English. If they began with AG=PRO, one would expect NS sentences in the beginning English of French speakers. White's data shows that this is not the case. Therefore, we can assume that English speakers acquiring Spanish begin by initially assuming that Spanish is not a NS language, like English, and that Spanish speakers acquiring English do assume that English is NS, like Spanish.

It is clear from the data in this study that the resetting process is not the same for both groups. Spanish acquirers appear to reset much earlier than the English acquirers do. In fact, these subjects, with forty-five hours of instruction, may already have begun the resetting process, since subject usage is reduced even in the first test. The ESL subjects took much longer to reset the parameter, and the process clearly wasn't finished by the time of the fourth test. Thus, as suggested earlier, it seems to take less time to reset

from the marked setting (English) to the unmarked setting (Spanish) than from the unmarked to the marked.

Much of the theoretical research on the NS phenomenon implies that there and it are similar syntactically in terms of the parameter and if they serve as triggers, do so equally. The data from this study indicate otherwise. At least for the ESL subjects, there seems to be a more salient trigger than it. There are two possible reasons. First, there constructions are both syntactically and semantically different from it constructions. In there constructions, there is a lexical "subject" which must agree with the verb be, although the subject noun phrase is to the right of the verb rather than the left. There also may carry some semantic import as a locative, as in There are the books. Subjects acquiring English may use the locative there to bootstrap acquisition of the existential there. Expletive it, while also homonymous with a pronoun, seldom occurs in ambiguous constructions, in that it is cold today will seldom be confused with it is on the desk, where the it has a clear referent from previous context.

In summary, it appears that resetting the NSP in second language acquisition is dependent on several factors: the relative settings of both the first and second language, the presence of appropriate trigger data, and discourse rules and pragmatic usage. Factors which often have been suggested, including the presence of overt morphological agreement on verbs, acquisition of modals, and use of inversion did not appear to be correlated with usage of subjects. However, the two studies in which such data was collected, the

production tasks of Tests 2 and 3, collected a limited number of tokens which could be used to test these factors. Further research is necessary to examine the role of modals and inversion in the resetting of the NSP.

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APPENDIX A

Stimuli for Imitation Test

English

Filler sentences

The flamenco dancer hoped that all her friends came to the concert.

We will discover that the manager solved the problem.

The old men say that the city is very big these days.

The tired boys remembered that the dog wanted his food at six.

I discovered that the cats ate all the cheese.

The two friends will know that the story is false.

I will remember that you will arrive at the airport tomorrow.

My best friend said that she wrote his favorite novel.

Filled Noun Subjects

We hope that our friend will stay for the weekend.

The young woman will announce that the meeting will begin at noon.

I think that the Spanish dancers will come to El Paso.

The mathematics teacher thinks that the students are studying hard.

Pronominal subjects

The reporter wrote that they won the elections in Texas.

The secretary told the director that they cancelled the meeting.

We thought that you had an appointment later.

I believed that we finished the project on time.

Bill believes that drives a car very well.

Her mother prefers that buy two cars for the family.

The boys remembered that found the cats in a box.

We hoped that will arrive at the airport at seven.

There subjects

The orchestra conductor knew that there were fifty people in the chorus.

The professor said that there are ten computers on the third floor.

The manager thought that there was more work to do.

The policeman heard that there was the chance of a holiday this week.

The politicians know that is one week before the elections.

The manager announced that are five minutes before the meeting.

The man read that was an accident on the highway.

The cook thinks that are two chickens left in the oven.

It subjects

The children knew that it was raining this morning.

The students discovered that it was important to relax.

The teacher said that it was very easy to pass this course.

The dancer felt that it was impossible to win the prize.

They knew that was difficult to finish the job.

The newspaper wrote that was raining a lot in Hong Kong.

The policeman said that was dangerous to drive fast.

My friends told me that was snowing in New York.

Spanish

Filler Sentences

Los dos amigos sabrán que la historia es falsa.

Los hombres viejos dicen que la ciudad está muy grande en estos días.

La bailadora de flamenco esperó que todas sus amigas vinieran al concierto.

Yo descubrí que los gatos se comieron todo el queso.

Nosotros descubrimos que el gerente resolvió el problema.

Nosotros pensamos que nuestro amigo se quedará la fin de semana.

Mi amigo dijo que ella escribió su novela favorita.

Filled Noun subjects

Los niños cansados recordaron que el perro quería su comida a las seis.

Yo creo que los bailadores españoles vendrán al El Paso.

La maestra de matemáticas cree que los estudiantes estudian mucho.

La mujer joven anunciará que la reunión comenzará a las doce.

Pronoun subjects

Nosotros esperábamos que llegarán al aeropuerto a las siete.

Juan cree que maneja un auto muy bien.

Su madre quiere que compren dos autos para la família.

Los niños recuerdan que encontraron los gatos en una caja.

Nosotros creímos que usted tuvo una cita después.

La secretária informó al director que ellos cancelaron la reunión.

El reportero escribió que ellos ganaron las elecciones en Téjas.

Yo recordé que usted llegará al aeropuerto mañana.

Hay constructions

La profesora dijo que hay diez computadoras en el tercer piso.

El director del coro sabe que habían cinquenta personas en éste.

El policía escuchó que había la posibilidad de una fiesta esta semana.

El gerente creyó que había más trabajo que hacer.

El hombre leyó que allá estaba un accidente en la carretera.

El gerente anunció que allá están cinco minutos antes de la reunión.

El cocinero cree que allá están dos pollos más en el horno.

Los políticos saben que allá está una semana antes de las elecciones.

Es constructions

El maestro dijo que era muy fácil pasar este curso.

Los niños saben que estaba lloviendo esta mañana.

Los estudiantes descubieron que fue muy importante relajarse.

La bailarina creyó que era imposible ganar el premio.

El policía dijo que el fue peligroso conducir muy rápido.

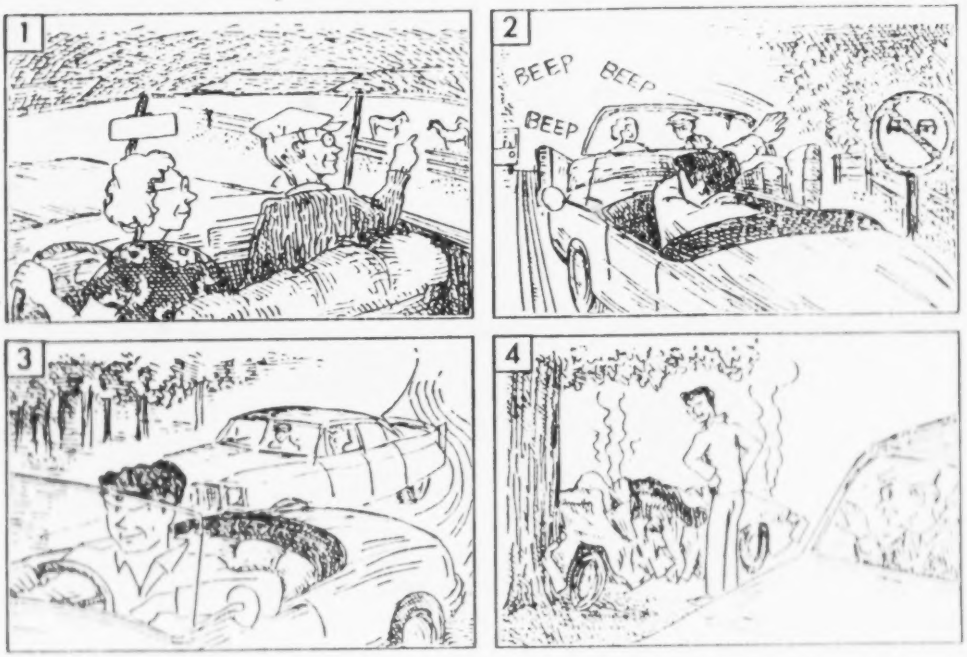
Los trabajadores saben que él es difícil completar el trabajo.

Mis amigos me dijeron que él estaba nublando en Nuevo York ayer.

El diário escribió que él está lloviendo mucho en Hong Kong.

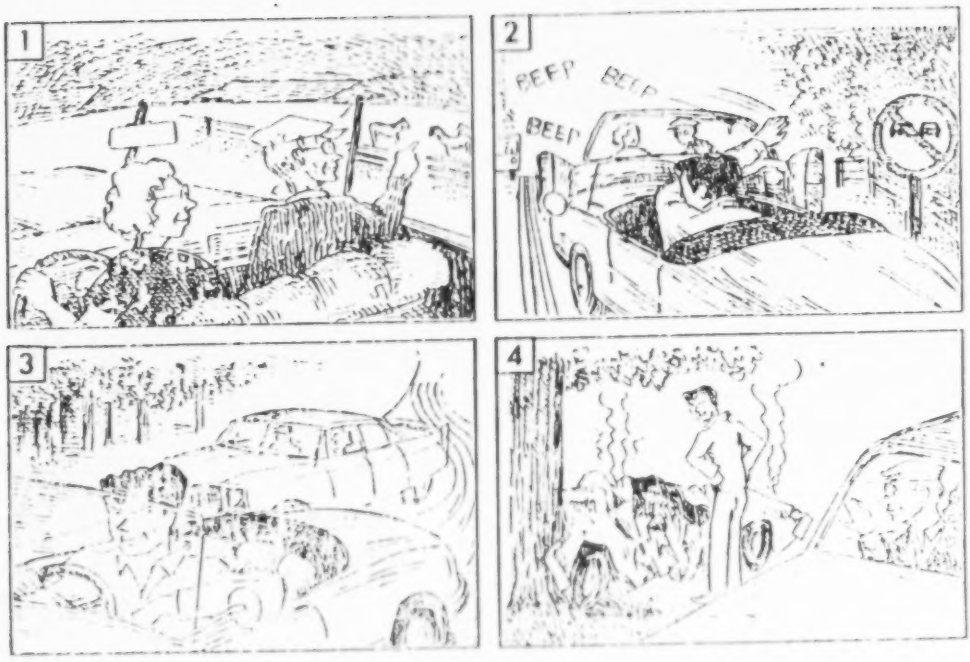
APPENDIX B

Written Narration Pictures and Instructions



ID Number: _____ Date: _____

DIRECTIONS: Look at the pictures and write the story. Write as much as you can. You will have ten minutes.



No. SS: _____ Fecha _____

INSTRUCCIONES: Mire los dibujos y escriba una historia acerca de ellos. Escriba tanto como sea posible durante diez minutos.

APPENDIX C

Oral Narration Picture

INSTRUCTIONS: I'm going to show you a picture of an apartment. I want you to describe the apartment and the person who lives there in as much detail as you can.

APPENDIX D

DEPT. OF LANGUAGES AND LINGUISTICS ID NO. _____

ENGLISH TEST TWO DATE _____

Instrucciones: Esta es una investigación sobre las intuiciones gramaticales de los hispanoparlantes que están aprendiendo inglés. Lea las oraciones siguientes. En el blanco al principio de cada oración, dé su opinión, usando una escala del uno (1) al cinco (5), de la forma siguiente:

1 - suena muy bien
2 - suena un poco bien
3 - no puedo juzgar
4 - suena un poco mal
5 - suena muy mal

Por favor corrija aquellas oraciones que Ud. marque con un (4) o (5). Hay 36 oraciones.

_____ 1. The students discovered that it was important to relax.

_____ 2. The orchestra conductor knew that there were fifty people in the chorus.

_____ 3. The reporter wrote that they won the elections in Texas.

_____ 4. The flamenco dancer hoped that all her friends came to the concert.

_____ 5. The children knew that it was raining this morning.

_____ 6. The secretary told the director that they cancelled the meeting.

_____ 7. The politicians know that is one week before the elections.

_____ 8. The professor said that there are ten computers on the third floor.

_____ 9. We thought that you had an appointment later.

_____ 10. We will discover that the manager solved the problem.

_____ 11. The old men say that the city is very big these days.

_____ 12. The manager announced that are five minutes before the meeting.

_____ 13. Bill believes that drives a car very well.

_____ 14. The teacher said that it was very easy to pass this course.

_____ 15. The tired boys remembered that the dog wanted his food at six.

_____ 16. I discovered that the cats ate all the cheese.

_____ 17. Her mother prefers that buy two cars for the family.

_____ 18. I believed that we finished the project on time.

_____ 19. The manager thought that there was more work to do.

_____ 20. The boys remembered that found the cats in a box.

_____ 21. They knew that was difficult to finish the job.

_____ 22. The policeman heard that there was the chance of a holiday this week.

_____ 23. The newspaper wrote that was raining a lot in Hong Kong.

_____ 24. The two friends will know that the story is false.

_____ 25. We hope that our friend will stay for the weekend.

_____ 26. We hoped that will arrive at the airport at seven.

_____ 27. The policeman said that was dangerous to drive fast.

_____ 28. The man read that was an accident on the highway.

_____ 29. The dancer felt that it was impossible to win the prize.

_____ 30. The cook thinks that are two chickens left in the oven.

_____ 31. The young woman will announce that the meeting will begin at noon.

_____ 32. I think that the Spanish dancers will come to El Paso.

_____ 33. I will remember that you will arrive at the airport tomorrow.

_____ 34. My best friend said that she wrote his favorite novel.

_____ 35. My friends told me that was snowing in New York.

_____ 36. The mathematics teacher thinks that the students are studying hard.

DEPT. OF LANGUAGES AND LINGUISTICS
SPANISH TEST TWO

ID NO. _____
DATE _____

Instructions: This is a study about the grammatical intuitions of English speakers who are learning Spanish. Read each of the following sentences in Spanish. In the blank in front of the sentence, put a numerical rating to show your opinion of the sentence, from one (1) to five (5). Use the following scale:

1 - sounds very good
2 - sounds pretty good
3 - can't judge, no opinion
4 - sounds pretty bad
5 - sounds very bad

If you rate a sentence as (4) or (5), please try to correct the sentence. There are thirty-six (36) sentences.

_____ 1. Nosotros esperábamos que llegarán al aeropuerto a las siete.

_____ 2. El maestro dijo que era muy fácil pasar este curso.

_____ 3. Nosotros creímos que usted tuvo una cita después.

_____ 4. Los dos amigos sabrán que la historia es falsa.

_____ 5. Los hombres viejos dicen que la ciudad está muy grande en estos días.

_____ 6. La bailadora de flamenco esperó que todas sus amigas vinieran al concierto.

_____ 7. Yo descubrí que los gatos se comieron todo el queso.

_____ 8. La secretária informó al director que ellos cancelaron la reunión.

_____ 9. Nosotros descubrimos que el gerente resolvió el problema.

_____ 10. La profesora dijo que hay diez computadoras en el tercer piso.

_____ 11. Los niños cansados recordaron que el perro quería su comida a las seis.

_____ 12. El policía dijo que el fue peligroso conducir muy rápido.

_____ 13. El hombre leyó que allá estaba un accidente en la carretera.

_____ 14. Juan cree que maneja un auto muy bien.

_____ 15. El director del coro sabe que habían cinquenta personas en éste.

_____ 16. Los trabajadores saben que él es difícil completar el trabajo.

_____ 17. Los niños saben que estaba lloviendo esta mañana.

_____ 18. Los estudiantes descubieron que fue muy importante relajarse.

_____ 19. Yo creo que los bailadores españoles vendrán al El Paso.

_____ 20. El policía escuchó que había la posibilidad de una fiesta esta semana.

_____ 21. La maestra de matemáticas cree que los estudiantes estudian mucho.

_____ 22. El gerente anunció que allá están cinco minutos antes de la reunión.

_____ 23. Mis amigos me dijeron que él estaba nublando en Nuevo York ayer.

_____ 24. El reportero escribió que ellos ganaron las elecciones en Téjas.

_____ 25. El cocinero cree que allá están dos pollos más en el horno.

_____ 26. Yo recordé que usted llegará al aeropuerto mañana.

_____ 27. La bailarina creyó que era imposible ganar el premio.

_____ 28. La mujer joven anunciará que la reunión comenzará a las doce.

_____ 29. Su madre quiere que compren dos autos para la família.

_____ 30. Mi amigo dijo que ella escribió su novela favorita.

_____ 31. Los niños recuerdan que encontraron los gatos en una caja.

_____ 32. Nosotros pensamos que nuestro amigo se quedará la fin de semana.

_____ 33. Los políticos saben que allá está una semana antes de las elecciones.

_____ 34. El gerente creyó que había más trabajo que hacer.

_____ 35. El diário escribió que él está lloviendo mucho en Hong Kong.

_____ 36. Los trabajadores saben que él es difícil completar el trabajo.

Curriculum Vitae

Marianne Phinney received her Bachelor's degree with Joint Honours in Anthropology and Linguistics from McGill University in 1976. She received the Ph.D. in Linguistics from the University of Massachusetts at Amherst in 1981. She spent one year as a post-doctoral research assistant in Psychology under Jill deVilliers and moved to the University of Puerto Rico at Mayaguez as Assistant Professor of English Linguistics in 1982. She came to the University of Texas at El Paso as Assistant Professor of Linguistics in 1985, where she is the Coordinator of the ESOL program. She has published several papers on syntactic theory and second language acquisition and the effectiveness of computer-assisted instruction in second language composition.